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Rocky Flats Plant
Aerospace Operations
Rockwell International Corporation
P O Box 464
Golden Colorado 80402-0464
(303) 966-7000
Contractor to U S Department of Energy

Rockwell International

ORRES CONTROL
UTGOING LTR NO

89 RF 2284

DIST	LTR	ENCL
CHINI D J	X	X
ER C P		
JRDT R J	X	X
NTZ E R	X	X
OD R C	X	X
KER E H		
ZER J E		
BY W A		
JETT J F	X	X
YERS G W		
ECKER J H		
ANNON W M		
TH R E		
STON W F		
OZNIAK B D		
JNG E R		
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RNIVAL G J		
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RMAN L K		
BERT J L		
DEY J B		
OFFMAN R B		
AMANN R L		
IEG D M		
UDENBURG G E		
KINLEY K B		
AIMON E R		
EWBY R L		
JRNER H L		
LASQUEZ R N		
ORRES CONTROL	X	X
Aon, S J	X	X
Schultz, N M	X	X
nos, E D	X	X
Zecche, R.C.	X	X
Setlock, G H	X	X
Tarlad, C.L.	X	X
ASSIFICATION		
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89-RF-2284

Edward S. Goldberg
Acting Area Manager, RFO

CITIES OF WESTMINSTER, THORNTON AND NORTHGLENN LETTER OF REQUEST

This information is for the attention of C. C. Jierree

A June 2, 1989 letter (see attached) co-signed by representatives of the cities of Westminster, Thornton and Northglenn was directed to one of my staff (G. Setlock) instead of the DOE Area Manager. He provided a copy of the letter to C. Jierree for review and consideration of the cities' requests concerning their contracts with the United States Geological Survey (U.S G.S) Apparently, U.S.G.S. will begin undertaking intensive studies of Standley Lake over the next 18 months.

To assist in your response to the cities requests, I submit the following background/clarification information. A phosphorus standard is being actively pursued for Standley Lake with the aim of preventing eutrophication problems. Eutrophication studies (i.e., nutrient loading --> algal blooms) have been ongoing for many years at Standley Lake. A private consulting firm (Richard Arber & Associates) has been under contract to the cities to study this problem area for the past 5+ years.

Sediment chemistry studies, with respect to eutrophication concerns, should focus on release of nutrients and metals from deposited sediments Apparently, with the recent publicity surrounding Rocky Flats and Broomfield's diversion ditch around Great Western Reservoir, the cities are seeking to expand the scope of their sediment studies to include radionuclides (i.e., plutonium) The studies conducted in the 1970's (EML and WHOI) were not very comprehensive and in one case a single core sample was utilized to extrapolate the inventory of radionuclides in the entire reservoir Their statement that "a large portion of the plutonium in the sediments may have come from the Rocky Flats Plant" is speculative

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While contamination events in Great Western Reservoir (i.e., tritium and plutonium in sediments) are well documented and traceable to past plant incidents, similar correlations to Standley Lake are not as well defined. A 1985 sediment study conducted by Rockwell International did not identify any anomalous plutonium levels in surface grab samples. Plutonium originating from above-ground nuclear weapons testing in the 1950's, 60's, 70's is one source that has certainly contributed measureable quantities of plutonium to sediments of Standley Lake. Any historic plant inputs to Standley Lake would have been via Woman Creek, dust resuspension c/o 903 Pad Area or atmospheric fallout c/o past fire incidents at the plant.

Core sampling results from the U S G.S study will have to be evaluated against all of these potential and actual contributory sources Post-depositional migration of plutonium in recent sediments is not a likely pathway via geochemical technical literature references. However, preferential concentration of atmospheric fallout radionuclides in deep (fine-grained) reservoir pool sediments is an established geochemical phenomenon Quantifying original deposition dates and sources of plutonium in Standley Lake is a technically involved, costly process. At a minimum, it would involve careful sediment sampling and core dissection/processing, coupled with Lead-210 geochronology and Pu-239 vs Pu-240 isotopic ratios to begin to resolve such issues

Based upon the above discussions, I feel that complying with the cities' request (i.e., DOE funding the chemical analysis of sediment samples) is not warranted. No scope (i.e., total # of samples) has been specified and DOE would be funding nutrient/trace metal analyses (i.e., cities' separate eutrophication concerns) in addition to acquiring an indication of historic radionuclide loading to reservoir sediments. I would propose either splitting samples for plutonium analyses or funding such analyses at a qualified offsite laboratory (i e , Accu-Labs Inc., Wheat Ridge, CO.) as a defensible alternative proposal to the cities request once the scope of their efforts is understood

Please contact George Setlock, Manager, Environment & Health Programs, X2453 if you have any questions or require additional information on this topic

R J Erfurdt

R J. Erfurdt, Director
Health, Safety and Environment

Orig. and 1 cc - E. S Goldberg
Enc